

Name _____

Date _____

LESSON
4.7

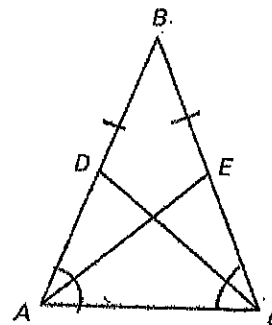
Practice C *continued* For use with pages 264-270

In Exercises 16 and 17, complete the proof.

16. GIVEN: $\angle BAC \cong \angle BCA$, $\overline{BD} \cong \overline{BE}$

PROVE: $\angle BDC \cong \angle BEA$

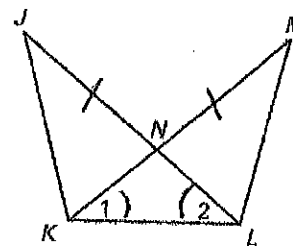
Statements	Reasons
1. $\angle BAC \cong \angle BCA$	1. ? Given
2. ? $\overline{BA} \cong \overline{BC}$	2. Converse of Base Angles Theorem
3. $\angle B \cong \angle B$	3. ? Reflexive Prop of \cong
4. ? $\overline{BD} \cong \overline{BE}$	4. Given
5. ? $\triangle BDC \cong \triangle BEA$	5. SAS Congruence Postulate
6. $\angle BDC \cong \angle BEA$	6. ? CPCTC



17. GIVEN: $\overline{JN} \cong \overline{MN}$, $\angle 1 \cong \angle 2$

PROVE: $\overline{JK} \cong \overline{ML}$

Statements	Reasons
1. ? $\angle 1 \cong \angle 2$	1. Given
2. $\overline{NK} \cong \overline{NL}$	2. ? Base Angle Converse
3. ? $\overline{NK} \cong \overline{NL}$	3. Definition of \cong segments
4. ? $\overline{JN} \cong \overline{MN}$	4. Given
5. $JN = MN$	5. ? def of \cong
6. ? $JN + NL = NK + NM$	6. Addition property of equality
7. $JN + NL = JL$ $MN + NK = MK$	7. ? Segment Addition Post
8. ? $JL = MK$	8. Substitution property of equality
9. $\overline{JL} \cong \overline{MK}$	9. ? def of \cong
10. ? $\overline{KL} \cong \overline{KL}$	10. Reflexive property of congruence
11. $\triangle JKL \cong \triangle MLK$	11. ? SAS
12. $\overline{JK} \cong \overline{ML}$	12. ? CPCTC



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LESSON
4.7**Practice C**

For use with pages 264-270

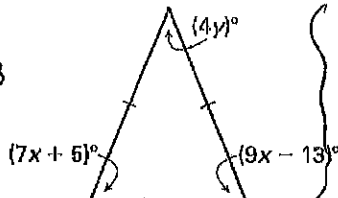
Find the values of x and y .

1.

$$7x + 5 = 9x - 13$$

$$18 = 2x$$

$$9 = x$$



2.

$$(15x - 13)^\circ$$

$$(2y)^\circ$$

$$(8x + 29)^\circ$$

$$2(77) + 2y = 180$$

$$2y = 26$$

$$y = 13$$

$$(11x + 10)^\circ$$

$$(7y + 5)^\circ$$

$$(9y)^\circ$$

$$2(11x + 10) + 9x - 26 = 180$$

$$31x - 6 = 180$$

$$31x = 186$$

$$x = 6$$

3.

$$13x - 2 = 7x + 19$$

$$6x = 21$$

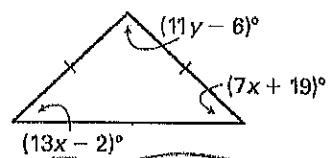
$$x = \frac{7}{2}$$

$$2(\frac{87}{2}) + 11y - 6 = 180$$

$$81 + 11y = 180$$

$$11y = 99$$

$$y = 9$$



$$28x + 27 = 40x - 9$$

$$36 = 12x$$

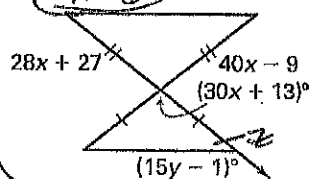
$$x = 3$$

$$2z + 103 = 180$$

$$2z = 77$$

$$z = \frac{77}{2}$$

6.



$$15y - 1 + \frac{77}{2} = 180$$

$$15y + \frac{75}{2} = 180$$

$$15y = \frac{285}{2}$$

$$y = \frac{19}{2}$$

$$18y + 7y + 5 = 180$$

$$25y = 175$$

$$y = 7$$

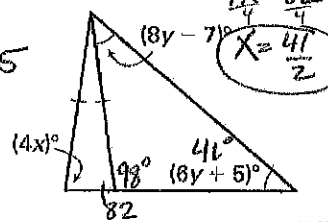
Find the values of x and y , if possible. If not possible, explain your reasoning.

7.

$$8y - 7 = 6y + 5$$

$$2y = 12$$

$$y = 6$$



$$4x = 82$$

$$x = \frac{41}{2}$$

8.

$$4x - 2 = 30$$

$$4x = 32$$

$$x = 8$$

$$(4x - 2)^\circ$$

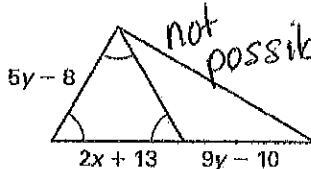
$$(7y + 9)^\circ$$

$$7y + 9 = 30$$

$$7y = 21$$

$$y = 3$$

9.



not possible

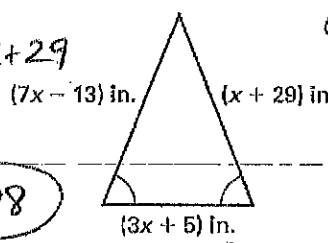
Find the perimeter of the triangle.

10.

$$7x - 13 = x + 29$$

$$6x = 42$$

$$x = 7$$



$$P = 98$$

11.

$$(4x + 3) \text{ m}$$

$$(8x - 15) \text{ m}$$

$$(5x + 8) \text{ m}$$

$$4x + 3 = 8x - 15$$

$$18 = 4x$$

$$\frac{9}{2} = x$$

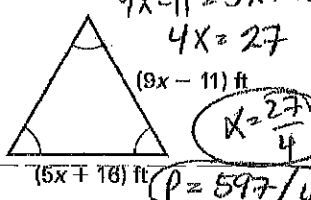
$$P = \frac{145}{2}$$

12.

$$9x - 11 = 5x + 16$$

$$4x = 27$$

$$x = \frac{27}{4}$$



$$P = 59\frac{7}{4}$$

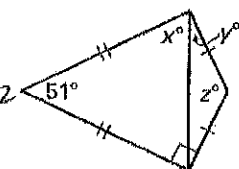
Find the values of x , y , and z .

13.

$$180$$

$$-51$$

$$129 \div 2$$



$$x = \frac{129}{2}$$

$$y = \frac{51}{2}$$

$$z = 129$$

14.

$$\frac{180}{119} \div 2 = 58$$

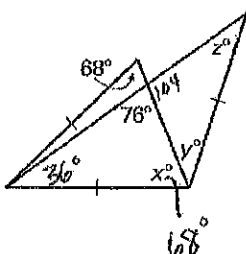
$$\frac{90}{58} = 32$$

$$x = 58$$

$$y = 32$$

$$z = 32$$

15.



$$x = 68^\circ$$

$$z = 36^\circ$$

$$y = 40$$

Key

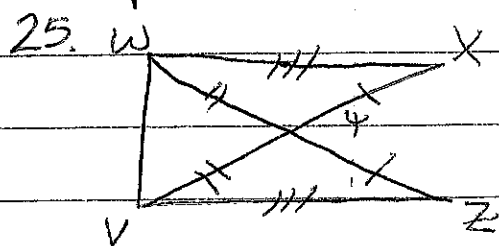
p238 25, 27

p246 38

p255

31, 32

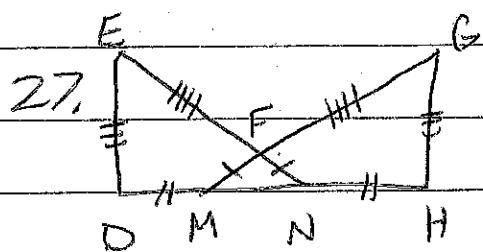
p263 6



G: $\overline{WX} \cong \overline{VZ}$ $\overline{WY} \cong \overline{VY}$ $\overline{YZ} \cong \overline{VX}$

P: $\triangle VWX \cong \triangle WVZ$

S	R
①	① Given
② $\overline{WV} \cong \overline{WV}$	② Refl.
③ $\overline{WX} = \overline{VZ}$; $\overline{YX} = \overline{YZ}$	③ def of \cong
④ $\overline{WY} + \overline{YZ} = \overline{VY} + \overline{YX}$	④ Add
⑤ $\overline{WY} + \overline{YZ} = \overline{WZ}$ $\overline{VY} + \overline{YX} = \overline{VX}$	⑤ SAP
⑥ $\overline{WZ} = \overline{VX}$	⑥ Subs
⑦ $\overline{WZ} \cong \overline{VX}$	⑦ def of \cong
⑧ $\triangle VWX \cong \triangle WVZ$	⑧ SSS



① $\overline{FM} \cong \overline{FN}$ $\overline{DM} \cong \overline{HN}$ ① Given

$\overline{EF} \cong \overline{GF}$ $\overline{DE} \cong \overline{HG}$

② $DM = HN$; $\overline{EF} = \overline{GF}$
 $\overline{FN} = \overline{FM}$ ② def of \cong

③ $MN = MN$ ③ Refl

④ $DM + MN = MN + HN$
 $\overline{EF} + \overline{FN} = \overline{GF} + \overline{FM}$ ④ Add

⑤ $DM + MN = DN$
 $MN + HN = MH$ ⑤ SAP

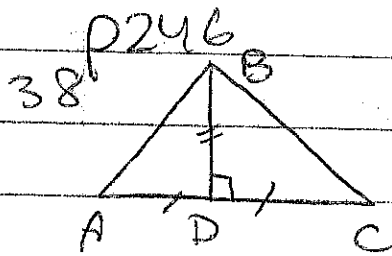
⑥ $DN = MH$; $EN = GM$ ⑥ Subst

⑦ $\overline{DN} \cong \overline{MH}$; $\overline{EN} \cong \overline{GM}$ ⑦ def of \cong

⑧ $\triangle DEN \cong \triangle HGM$ ⑧ SSS

(This prove
needs 2 segments
proven using
SAP.)

$\overline{EF} + \overline{FN} = \overline{EN}$
 $\overline{GF} + \overline{FM} = \overline{GM}$

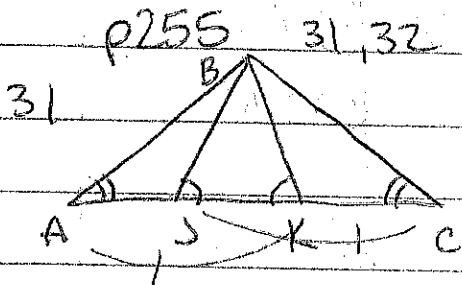


- ① D is the midpt \overline{AC}
- ② $\overline{AD} \cong \overline{DC}$
- ③ $\overline{BD} \cong \overline{BD}$
- ④ $\angle BDC$ & $\angle BDA$ are right \angle s

- ① Given
- ② def of midpt
- ③ Reflexive
- ④ Given (picture)

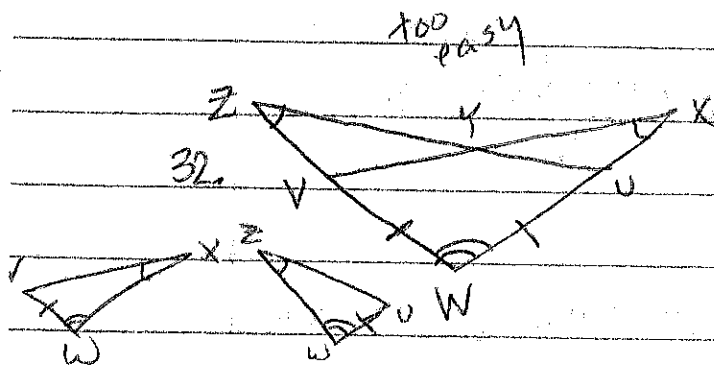
- ⑤ $\angle BDC \cong \angle BDA$
- ⑥ $\triangle ABD \cong \triangle CBD$

- ⑤ Rt \angle s are \cong
- ⑥ SAS



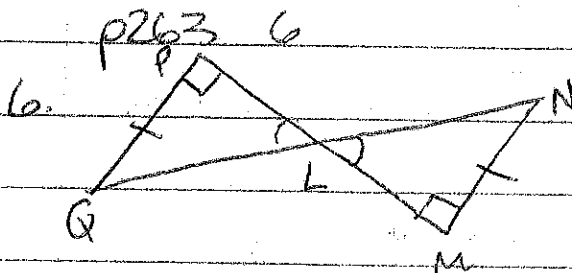
- 31
- ① $\overline{AK} \cong \overline{CK}$; $\angle BAK \cong \angle BCK$
 $\angle A \cong \angle C$
 - ② $\triangle ABK \cong \triangle CBK$

- Reasons
- ① Given
 - ② ASA



- Statements
- ① $\overline{XW} \cong \overline{ZW}$ $\angle X \cong \angle Z$
 - ② $\angle W \cong \angle W$
 - ③ $\triangle XWV \cong \triangle ZWU$

- Reason
- ① Given
 - ② Ref
 - ③ AAS



- S
- ① $\overline{PQ} \cong \overline{MN}$
 $m\angle P = m\angle M = 90$
 - ② $\angle P \cong \angle M$
 - ③ $\angle PLQ \cong \angle MLN$
 - ④ $\triangle PLQ \cong \triangle MLN$
 - ⑤ $\overline{QL} \cong \overline{NL}$

- R
- ① Given
 - ② def of \cong
 - ③ Vert \angle s \cong
 - ④ AAS
 - ⑤ CPCTC